

WHAT IS CLAIMED IS:

1 An alarm unit incorporated in an electric system to which a power voltage is supplied, the alarm unit comprising:

5 a first voltage evaluation circuit evaluating the power voltage by comparing the power voltage with a reference voltage independent from the power voltage, thereby outputting an accident state signal when the power voltage is lower than a first predetermined voltage;

a second voltage evaluation circuit, which works in a
10 predetermined voltage rang in which the first voltage evaluation circuit is insensitive to an operation thereof, evaluating the power voltage by comparing the power voltage with an upper limit of the predetermined voltage range, thereby outputting the accident state signal when the power voltage is lower than the upper limit smaller
15 than the first predetermined voltage; and

an alarm signal output circuit outputting an alarm signal in response to the outputted accident state signal.

2 A sensor unit incorporated in an electric system to which a power
20 voltage is supplied, the sensor unit having a sensor circuit sensing a physical quantity to output a sensor signal responding to the sensed physical quantity, comprising:

a first voltage evaluation circuit evaluating the power voltage by comparing the power voltage with a reference voltage independent
25 from the power voltage, thereby outputting an accident state signal when the power voltage is lower than a first predetermined voltage;

a second voltage evaluation circuit, which works in a predetermined voltage rang in which the first voltage evaluation circuit is insensitive to an operation thereof, evaluating the power voltage by comparing the power voltage with an upper limit of the predetermined voltage range, thereby outputting the accident state signal when the power voltage is lower than the upper limit smaller than the first predetermined voltage; and

an alarm signal output circuit outputting an alarm signal in response to the outputted accident state signal.

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3 A sensor unit as claimed in claim 2, comprising an output circuit:

outputting a sensor output voltage depending on a sensor signal outputted from the sensor circuit when the power voltage is over the first predetermined voltage, and

15 inhibiting the output circuit from outputting the sensor output voltage in response to an output of the accident state signal, so that the alarm signal output circuit provides the alarm signal when the power voltage is equal to or below the first predetermined voltage.

20 4 A sensor unit as claimed in claim 2, wherein the alarm signal voltage is set to be higher than a maximum voltage of the sensor output voltage from the output circuit, the alarm signal voltage having a predetermined margin over the maximum voltage.

25 5 A sensor unit as claimed in claim 3, wherein the sensor unit further comprising a clamping circuit for clamping the sensor output voltage

from the output circuit at a voltage level distinguished from the alarm signal voltage.

6 A sensor unit as claimed in claim 5, wherein the voltage level
5 distinguished from the alarm signal voltage is set to be lower than the alarm signal voltage with a predetermined margin.

7 A sensor unit as claimed in claim 5, wherein the clamping circuit
is configured to freeze an operation thereof if the accident state signal
10 is outputted.

8 A sensor unit as claimed in claim 3, wherein the alarm signal
voltage is a divided voltage produced by dividing an output voltage of
a stabilized power supply independent from the sensor unit by ratios
15 of resistances between a pull-up resistor and a plurality of dividing
resistors in the output circuit, the pull-up resistor being configured to
connect a signal line of the output circuit and the stabilized power
supply.

20 9 A sensor unit as claimed in claim 7, wherein the alarm signal
voltage is a divided voltage produced by dividing an output voltage of
a stabilized power supply independent from the sensor unit by ratios
of resistances between a pull-up resistor and a plurality of dividing
resistors in the output circuit, the pull-up resistor being configured to
25 connect a signal line of the output circuit and the stabilized power
supply.